IN THE SPECIFICATION

Please amend the paragraph beginning on page 3, lines 3-6:

C1 In different embodiments of the present invention, properties of the common waveguide such as optical properties, or centerline curvature or cross-sectional are non-uniform along [[or]] the waveguide centerline or non-uniform across a normal to the centerline.

Please amend the paragraph beginning on page 3, lines 14-16:

C2 Figure 2A is a cross-sectional view of one embodiment of an amplifier illustrating several layer structures and the integration of two materials with differing optical properties by a selected area growth technique.

Please amend the paragraph beginning on page 3, lines 17-19:

C3 Figure 2B is a cross-sectional view of the Figure 2 assembly illustrating one embodiment for the integration of materials with differing optical properties by a disordered well technique.

Please amend the paragraph beginning on page 3, lines 20-22:

C4 Figure 2C is a cross-sectional view of one embodiment of an amplifier illustrating one embodiment for the integration of several different band gap materials by a butt joint regrowth technique.

Please amend the paragraph beginning on page 4, lines 7-12:

C5 In Figure 1A, laser assembly 100 comprises an integration of a laser and an optical amplifier, with the optical amplifier located external to the laser cavity. Front resonator mirror 120, laser gain section 130, laser phase control section 140, and back mirror 150 form a SGDBR-type laser 180 in epitaxial structure 170. The front and back mirrors define a laser cavity. Amplifier gain section [[105]] 110 and a portion of waveguide 105 define optical amplifier 190.

Please amend the paragraph beginning on page 4, lines 13-21:

C6 As shown in Figure 1A, despite being external to the laser cavity, the optical amplifier shares a common epitaxial structure 170 with the laser. Epitaxial structure 170 is formed on a substrate (not

C6 CONT...

shown) by processes well-known in the art of semiconductor fabrication. By tailoring optical properties (such as band gap) of different portions of the epitaxial structure, both optically active and optically passive sections can be fabricated in a common structure. Examples of optically active sections of the embodiment shown in Figure 1 are gain sections 110 and 120, phase control section 140 and mirrors [[110]] 120 and 150. An example of an optically passive section is the portion of waveguide 105 proximal to output facet 195.

Please amend the paragraph beginning on page 5, lines 1-6:

C7

In the embodiment of Figure 1A, optical amplifier 190 has an active section and a passive section. The active section, amplifier gain section 110, is substantially straight. The passive section of waveguide 105 is curved and intersects output facet 195 at an oblique angle. Both waveguide curvature and the oblique intersection with the output facet act to prevent reflections at the output facet from coupling back into the optical amplifier 190 and laser 180.

Please amend the paragraph beginning on page 5, lines 13-15:

C8

In Figure 1B waveguide 105 is formed between p-type and n-type semiconductor layers 125 and 115, respectively. Mirrors 120 and 150 are formed by sample gratings etched in waveguide 105 and sampling period [[105]] 135, as is well-understood in the art.

Please amend the paragraph beginning on page 6, lines 22-26:

C9 Figures 3A-3D are plan views, illustrating different embodiments of optical amplifier 190 (see Figure 1). In Figures 3A-3D optical amplifier 190, waveguide 105, epitaxial structure 170, output facet 195, active amplifier section 310, passive amplifier section 320, active-passive junction 330, curved waveguide portion 340, flared waveguide portions 350 and 355 and waveguide mode adapter 360 are shown.

Please amend the paragraph beginning on page 7, lines 11-24:

C10 Figure 3C shows an alternate embodiment where a waveguide portion in the amplifier active section is flared, or tapered, to increase the saturated output power. Flared waveguide portion 350 increases the amplifier active volume as compared to the embodiment shown in Figure 3A and decreases the photon density. To accomplish this effectively without introducing significant fiber coupling difficulties it is preferable to use an adiabatic flare, wherein there is no energy transfer across optical modes over the flare to a wider waveguide cross-section. In a preferred embodiment, a second flared-down section 355 to a narrow waveguide cross-section is positioned in the amplifier optically passive section 320 since it is difficult to couple effectively from a wide waveguide into a single mode fiber at output facet 195. In a preferred embodiment, such a flared-down portion is before a curved waveguide portion 340, otherwise, higher order modes will be excited when curving the wide waveguide.[[.]] In the embodiment shown in Figure 3C, active-passive junction 330 is angled so that any reflections from this interface coupling back into the amplifier and laser will be reduced.